

An Investigation into the Relationship between Dietary Consumption, Anthropometric Index, Blood Biochemical factors and Lifestyle with coronary artery stenosis in Cardiovascular Patients Candidate for coronary Angiography

Abstract

Background and aim: Prevalence of cardiovascular diseases has been increased during the last two centuries and nowadays it has been known as a main reason of fatality and disability in the world. This disease imposes high costs to society in format of Surgery, others treatment program, control of complications and disability of persons. In this situation, Coronary artery disease as a multifactorial disease has Some risk factors. According to past studies in addition to inheritance, many of these risk factors of this disease have a root in Environmental factors, lifestyle and nutritional status in the present and past of patients. There are different diagnostic methods for patients who have Coronary Artery Disease but specialists introduce Coronary angiography as a best method of diagnosis and decision-making for treatment of Coronary arteries (LM:Left Main, LAD:Left Anterior Descending, LCX:Left Circumflex and RCA:Right Coronary Artery) disease. Between Coronary arteries, Left Main coronary artery stenosis (LM) is an important risk factor in fatality of Cardiovascular Patients. The purpose of this study is determination of relationship between dietary consumption, Anthropometric indexes, blood Biochemical factors and lifestyle with Coronary artery stenosis.

Material and methods: This Descriptive, analytic study had been done in Dr. Shariati Hospital of Tehran in 2016. Out of the patients undergoing coronary angiography and didn't have backward of coronary artery bypass surgery by The presence, 208 consecutive cases were assigned to participate in the study. Data was collected by using a questionnaire with 86 questions in the sections: Food Frequency questionnaire (FFQ), demographic, sleep and physical activity. Height, weight, waist circumference and wrist circumference was measured by the performer. The biochemical parameters of the blood were extracted from the sheet test of patients. Data were analyzed with SPSS 21. In this study we used Chi-square test, T-test and logistic correlation coefficient with the significance level 0.05.

Results: From the total of patients, 107 persons (51.4%) are male with an average age of 57.81 ± 12.184 years. With study of anthropometric factors, there is a significant correlation between Coronary artery stenosis and height ($r = -0.042$, $P = 0.025$), Wrist circumference ($r = 0.07$, $P = 0.006$), Waist circumference ($r = 0.05$, $P = 0.046$) and BMI ($r = 0.063$, $P = 0.016$). In Nutritional status, consumption of red meat ($P = 0.014$), egg ($P = 0.006$), chicken ($P = 0.030$), legume ($P = 0.000$) and soybean ($P = 0.002$) have a significant relationship with Coronary artery stenosis. Moreover, In vegetable and fruits groups the consumption of vegetable ($P = 0.003$), garlic and onion ($P = 0.033$) and fruits ($P = 0.004$) have a significant relationship with Coronary artery stenosis. In dairy groups eating milk ($P = 0.044$), cheese ($P = 0.015$), icecream ($P = 0.035$), yogurt ($P = 0.026$) and Type of yogurt ($P = 0.019$) have a relationship with stenosis of 4 Coronary

artery. In Bread and cereals groups, eating Barley($P=0.000$), In Simple sugars groups drinking soft drinks($P=0.021$), In fats groups, type of Oil Consumption ($P=0.008$) and eating nuts or oil seeds($P=0.009$) have a significant relationship with stenosis of 4 Coronary artery. Also Among the fluids containing coffee, coffee consumption($P=0.012$) have a significant relationship with Coronary artery stenosis. There is a significant correlation between LM artery stenosis and the number of daily water glasses ($r=-0.045$, $P=0.005$). Among the nutritional supplements, there is a significant relationship between Iron Supplementation and Coronary artery stenosis($P=0.041$). Time of eating breakfast ($r=0.081$, $P=0.003$) and Time of eating lunch ($r=0.034$, $P=0.034$) have a significant correlation with severity of Coronary artery stenosis. In study of Blood Biochemical factors, There are significant correlation between Blood Glucose level($r=0.053$, $P=0.025$), mean corpuscular volume (MCV) ($r=0.033$, $P=0.047$) and mean corpuscular hemoglobin (MCH) ($r=0.040$, $P=0.029$) with Coronary artery stenosis.

Also in study of social status, Shift work($P=0.028$), patient's job($P=0.003$) and family size($r=0.073$, $P=0.003$) are the others factors that are related to Coronary artery stenosis specially LM artery. There is a significant correlation between LM artery stenosis with The number of cigarettes smoked($r=0.023$, $P=0.018$). Sleep Time during night ($r=-0.102$, $P=0.001$), Time of waking up ($r=-0.044$, $P=0.005$) and disorders related to sleep, have a significant relationship with Coronary artery stenosis. In the study of the physical activity of patients Also Duration of doing low intensity exercise per week($r=-0.034$, $P=0.026$), Duration of doing high intensity exercise per week ($r=-0.026$, $P=0.040$) and Duration of watching TV per week ($r=0.076$, $P=0.030$) have a significant correlation with Coronary artery stenosis.

Conclusion: This study has shown that beside of Inheritance, Some Factors like : Lifestyle and Dietary Consumption, Anthropometric Indices (Height, Wrist circumference, Waist circumference and BMI) and Blood Biochemical factors (FBS, MCV, MCH) are the most important Factors that are Related to Coronary Artery stenosis. It Seems that, Approximately, we can decrease the Coronary Artery Stenosis with Modification of Lifestyle.

Key words: Dietary Consumption, Coronary Artery Stenosis, Anthropometric Factors, Blood Biochemical Factors, Lifestyle.